

Persistent Bioaccumulative Toxins Regulation

Chapter 173-333 WAC

PART I GENERAL PROVISIONS

NEW SECTION

WAC 173-333-100 Introduction. Persistent, bioaccumulative toxins (PBTs) are chemicals that pose a unique threat to human health and the environment in Washington state. They remain in the environment for long periods of time, are hazardous to the health of humans and wildlife, can build up in the food chain, and can be transported long distances and readily move between air, land and water media.

Because of the unique threat that these PBTs pose, special attention is necessary to identify actions that will reduce and minimize or eliminate threats to human health and the environment. While ecology addresses PBTs through existing regulatory and nonregulatory programs, there remains a need for multimedia, cross-program measures that will reduce and phase-out ~~eliminate~~ releases and uses of PBTs over time.

The goal of this chapter is to reduce and ~~eliminate~~ phase-out PBT the uses, ~~and~~ releases and exposures of ~~PBTs~~ in Washington. Ecology recognizes that many factors will influence whether and when this goal can be attained and that those factors will often vary depending on the PBT and the uses of the PBT. These factors include environmental and human health benefits, economic and social costs, technical feasibility, availability of safer substitutes, and consistency with other regulatory requirements. This chapter establishes a process that ecology will use to evaluate and identify actions that should be taken for particular PBTs. This process is designed to enhance actions being taken under other environmental laws and regulations.

NEW SECTION

WAC 173-333-110 What is the purpose of this chapter? The purpose of this chapter is to:

(1) Establish criteria ecology will use to identify persistent bioaccumulative toxins that pose human health or environmental threats ~~impacts~~ in Washington state;

(2) Establish a list of persistent bioaccumulative toxins;

(3) Establish procedures ecology will use to review and periodically update the list;

(4) Establish criteria for selecting persistent bioaccumulative toxins for which ecology will prepare chemical action plans;

(5) Define the scope and content of chemical action plans and establish the process ecology will use to prepare those plans; and

(6) Define the processes ecology will use to coordinate the implementation of this chapter with the department of health and other ~~state~~ agencies.

NEW SECTION

WAC 173-333-120 Applicability. (1) This chapter applies to the department of ecology (ecology). This chapter does not impose new requirements on persons using or releasing PBTs, and it does not create new authorities nor does it constrain existing authorities for ecology.

(2) This chapter provides for public involvement opportunities to allow interested persons to participate in the ecology processes for identifying PBTs and developing recommendations on measures to address uses and releases of PBTs.

NEW SECTION

WAC 173-333-130 Exemptions to the PBT list. Any pesticide with a currently valid registration that has been issued by the Environmental Protection Agency under the Federal Insecticide, Fungicide and Rodenticide Act, 7 U.S.C. 136 et seq., or any fertilizer regulated under the Washington Fertilizer Act, chapter 15.54 RCW, will not be included on the persistent bioaccumulative toxin list established under this chapter.

NEW SECTION

WAC 173-333-140 Administrative principles. (1) **Scientific information.** Ecology will base decisions on PBTs on sound public policy and credible scientific information. However, ecology believes that lack of full scientific consensus should not be used as a justification for delaying reasonable measures to prevent harm to human health or the environment.

(2) **Public involvement.** Ecology will provide opportunities for public involvement during the decision-making processes for identifying PBTs and preparing a CAP.

(3) **Clear documentation.** Ecology will provide clear and understandable descriptions and rationale for decisions implementing this chapter.

(4) **Predictability.** Ecology will implement this chapter in ways that allow stakeholders, interest groups, and the public to plan their participation in decision-making processes and future responses to recommendations that result from those processes.

(5) **Coordination.** Ecology will coordinate with federal and ~~other~~ state agencies, and local governments, tribes, and other interested parties in the development and implementation of CAPs and when revising the PBT list.

(6) **Rule amendments.** When amending any portion of this rule, Ecology will follow the requirements of the Administrative Procedure Act (APA), chapter 34.05 RCW.

PART II DEFINITIONS

NEW SECTION

WAC 173-333-200 Definitions. **"Administrative Procedure Act"** or **"APA"** means the Washington Administrative Procedure Act, chapter 34.05 RCW.

"Bioaccumulation" means the process by which substances increase in concentration in living organisms as they take in contaminated air, water, soil, sediment or food because the substances are very slowly metabolized or excreted.

"Bioaccumulation factor" or **"BAF"** means the ratio of the concentration of a chemical in an organism to the concentration of the chemical in the surrounding environment. The BAF is a measure of the extent to which the organism accumulates the chemical as a result of uptake through ingestion as well as contact from contaminated media, such as water.

"Bioconcentration factor" or **"BCF"** means the ratio of the concentration of a chemical in an organism to the concentration of the chemical in the surrounding environment. The BCF is a measure of the extent of chemical partitioning between an organism and the surrounding environment.

"Chemicals" means a naturally occurring element, mixture, or group of organic and inorganic compounds that is produced by or used in a chemical process.

"Chemical action plan" or **"CAP"** means a plan that identifies, characterizes and evaluates ~~addresses~~ uses and releases of a specific PBT or a group of PBTs and recommends actions to protect human health or the environment. ~~facilitates implementation of measures to manage, reduce or eliminate such uses and releases.~~

"Chemical group" means a grouping of chemicals which share a common chemical structure.

"Credible scientific information" means information that is based on a theory or technique that is generally acceptable in the relevant scientific community or has been collected or derived using standard or generally accepted methods and protocols and appropriate quality assurance and control

procedures.

"Cross-media transfer of chemicals" means the movement of a chemical from one medium, such as air, water, soil, or sediment, to another.

"Degradation" means the processes by which organic chemicals are transformed into derivative chemicals and ultimately broken down.

"Ecology" means the department of ecology.

"Environment" means any plant, animal, natural resource, surface water (including underlying sediments), ground water, drinking water supply, land surface (including tidelands and shorelands) or subsurface strata, or ambient air.

"Environmental half-life" means the time required for the concentration of a chemical to diminish to half its original value. The environmental half-life of a chemical is a measure of a chemical's persistence in the environment.

"Feasible" means reasonably capable of being accomplished or brought about or capable of being utilized or dealt with successfully.

"High-exposure populations" means groups of people that are at greater risk because they have a higher potential for exposure than the general population.

"Log-octanol water partition coefficient" or **"Log K_{ow}"** means the ratio of a chemical's concentration in the octanol phase to its concentration in the aqueous phase of a two-phase octanol/water system as expressed in a logarithmic format.

"Media" or **"medium"** means a component of the environment (air, water, soil or sediment) in which a contaminant is measured and an organism lives its life, and from which an organism can accumulate contaminants.

"Persistent bioaccumulative toxin" or **"PBT"** means a chemical or chemical group that meets or exceeds the criteria for persistence, bioaccumulation and toxicity criteria established in WAC 173-333-320 ~~this chapter~~.

"Persistence" means the tendency of a chemical to remain in the environment without transformation or breakdown into another chemical form. It refers to the length of time a chemical is expected to reside in the environment and be available for exposure.

"Sensitive population group" means groups of people that exhibit a different or enhanced response to a chemical ~~PBT~~ than most people exposed to a similar level of the chemical ~~PBT~~ because of genetic makeup, age, nutritional status or exposure to other toxic substances.

"Toxicity" means the degree to which a substance or mixture of substances can harm humans, plants or wildlife.

PART III
THE PBT LIST AND CRITERIA AND PROCEDURES FOR REVISING THE LIST

NEW SECTION

WAC 173-333-300 What is the purpose of the PBT list? (1)
Purpose. The purpose of the PBT list is to identify toxic chemicals that require further action because they remain ("persist") in the environment for long periods of time where they can bioaccumulate to levels that pose threats to human health and environment in Washington.

(2) **Intended uses of the PBT list.** Ecology will use the PBT list in the following ways:

(a) **Chemical action plans.** To select chemicals for chemical action plan development.

(b) **Ambient monitoring.** To help guide decisions on the design and implementation of ecology programs for characterizing chemical concentrations in the ambient environment.

(c) **Biomonitoring.** To encourage and inform the department of health regarding their efforts to monitor chemicals in human tissue.

(d) **Public awareness.** To promote greater public awareness on the problems associated with PBT chemicals, the uses and sources of individual PBTs and steps that individuals and organizations can take to reduce PBT uses, releases and exposure.

(e) **Voluntary measures.** To help identify opportunities for government agencies, businesses and individuals to implement voluntary measures for reducing and phasing out PBT uses and releases.

(3) **Relationship to actions addressing chemical uses and releases.** Ecology has determined that the chemicals on the PBT list pose a potential threat to human health and the environment in Washington.

(a) Ecology's decision to include a particular chemical on the PBT list does not represent a decision that all uses and releases of that chemical should be reduced and phased-out eliminated.

(b) Ecology does not intend to use the PBT list as the sole

basis for establishing discharge monitoring requirements that are not required under current permits. Ecology will evaluate and, if appropriate, prepare recommendations for additional monitoring requirements when preparing chemical action plans (WAC 173-333-420 and 173-333-430).

NEW SECTION

WAC 173-333-310 What chemicals or chemical groups are included on the PBT list? (1) **Purpose.** This section identifies the chemicals and chemical groups that ecology has determined meet the criteria specified in WAC 173-333-320.

(2) **PBT list.** Ecology has determined that the following chemicals or chemical groups meet the criteria specified in WAC 173-333-320.

Chemicals listed in alphabetical order	CAS Number
Aldrin	309-00-2
Cadmium	7440-43-9
Chlordane	57-74-9
Chlordecone (Kepone)	3734-48-3
Dichlorodiphenyltrichloroethane (DDT)	50-29-3
Dieldrin	60-57-1
Endrin	72-20-8
Heptachlor/Heptachlor epoxide	76-44-8/1024-57-3
Hexabromobiphenyl	36355-01-8
Hexabromocyclododecane	25637-99-4
Hexachlorobenzene	118-74-1
Hexachlorobutadiene	87-68-3
Lead	7439-92-1
Mercury	7439-97-6
Mirex	2385-85-5
Nonylphenol/4-nonylphenol (branched)	25154-52-3/84852-15-3
Pentachlorobenzene	608-93-5
Short-chain chlorinated paraffins	85535-84-8
Tetrabromobisphenol A	79-94-7
Tetrachlorobenzene, 1,2,4,5-	95-94-3
Toxaphene	8001-35-2
Chemical Categories listed in alphabetical order	
Perfluorooctane sulfonates (PFOS)	
Acid	1763-32-1
ammonium salt	29081-56-9
diethanolamine salt	70225-14-8
lithium salt	29457-72-5

potassium salt	2795-39-3
Phthalate esters	
<u>Di-isodecyl phthalate (DIDP)</u>	<u>68511-49-1 and 26761-40-0</u>
<u>Di-n-hexyl phthalate (DnHP)</u>	<u>84-75-3</u>
Polycyclic aromatic hydrocarbons (PAHs)	
7H-Dibenzo(c,g)carazole	194-59-2
Benzo(a)phenanthrene (Chrysene)	218-01-9
Benzo(a)pyrene	50-32-8
Benzo(b)fluoranthene	205-99-2
Benzo(g,h,i)perylene	191-24-2
Benzo(j)fluoranthene	205-82-3
Benzo(k)fluoranthene	207-08-9
Benzo(r,s,t)pentaphene	189-55-9
Dibenzo (a,e)pyrene	192-65-4
Dibenzo (a,h)pyrene	189-64-4
Dibenzo(a,h)acridine	226-36-8
Dibenzo(a,h)anthracene	53-70-3
Dibenzo(a,j)acridine	224-42-0
Fluoranthene	206-44-0
Indeno(1,2,3-cd)pyrene	193-39-5
Perylene	198-55-0
Polybrominated dibenzodioxins and furans	
2,3,7,8-tetrabromodibenzo-p-dioxin	50585-41-6
2,3,7,8-tetrabromodibenzofuran	67733-57-7
Polybrominated diphenyl ethers	
Pentabromodiphenyl ether	32534-81-9
Octabromodiphenyl ether	32536-52-0
Decabromodiphenyl ether	13654-09-6
Polychlorinated Biphenyls (PCBs)	
2,3',4,4',5 Pentachlorobiphenyl	31508-00-6
2,3,4,4',5 Pentachlorobiphenyl	74472-37-0
2,3,3',4,4' Pentachlorobiphenyl	32598-14-4
3,3',4,4',5,5' Hexachlorobiphenyl	32774-16-6
2,3',4,4',5,5' Hexachlorobiphenyl	52663-72-6
2,3,3',4,4',5' Hexachlorobiphenyl	69782-90-7
2,3,3',4,4',5 Hexachlorobiphenyl	38380-08-4
2,3,3',4,4',5,5' Heptachlorobiphenyl	39365-31-9
Polychlorinated Dibenzo-p-dioxins	
2,3,7,8 Tetrachlorodibenzo-p-dioxin	1746-01-6
1,2,3,7,8 Pentachlorodibenzo-p-dioxin	40321-76-4
1,2,3,4,7,8 Hexachlorodibenzo-p-dioxin	39227-28-6
1,2,3,6,7,8 Hexachlorodibenzo-p-dioxin	576-53-8
1,2,3,7,8,9 Hexachlorodibenzo-p-dioxin	19408-74-3
1,2,3,4,6,7,8 Heptachlorodibenzo-p-dioxin	35822-46-9
1,2,3,4,6,7,8,9 Octachlorodibenzo-p-dioxin	3268-87-9
Polychlorinated Dibenzofurans	

2,3,7,8 Tetrachlorodibenzofuran	51207-31-9
1,2,3,7,8 Pentachlorodibenzofuran	57117-41-6
2,3,4,7,8 Pentaachlorodibenzofuran	57117-31-4
1,2,3,4,7,8 Hexachlorodibenzofuran	70648-26-9
1,2,3,6,7,8 Hexachlorodibenzofuran	57117-44-9
1,2,3,7,8,9 Hexachlorodibenzofuran	72918-21-9
2,3,4,7,8,9 Hexachlorodibenzofuran	60851-34-5
1,2,3,4,6,7,8 Heptachlorodibenzofuran	67562-39-4
1,2,3,4,7,8,9 Heptachlorodibenzofuran	55673-89-7
1,2,3,4,6,7,8,9 Octachlorodibenzofuran	39001-02-0
Polychlorinated Naphthalenes	
Trichloronaphthalene	1321-65-9
Tetrachloronaphthalene	1335-88-2
Pentachloronaphthalene	1321-64-8
Hexachloronaphthalene	1335-87-1
Heptachloronaphthalene	32241-08-0

Aldrin/Dieldrin	309 00 2/60 57 1
*Cadmium (pending review of bioavailability)	7440 43 9
Chlordane	57 74 9
Chlordecone (Kepone)	3734 48 3
DDT, p,p'-	50 29 3
Endrin	72 20 8
Heptachlor/Heptachlor epoxide	76 44 8/1024 57 3
Hexabromobiphenyl	36355 01 8
Hexabromocyclododecane	25637 99 4
Hexachlorobenzene	118 74 1
Hexachlorobutadiene	87 68 3
*Lead (pending review of bioavailability)	7439 92 1
Mercury	7439 97 6
Mirex	2385 85 5
Perfluorooctane sulfonates (PFOS)	(a)
Pentachlorobenzene	608 93 5
Polycyclic aromatic hydrocarbons (PAHs)	(b)

Polybrominated-dibenzo-p-dioxins and dibenzofurans (PBDD/PBDF)	(e)
Polybrominated diphenyl ethers (PBDEs)	(d)
Polychlorinated biphenyls (PCBs)	1336-36-3
Polychlorinated-dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF)	(e)
Polychlorinated naphthalenes (PCN)	70776-03-3 (f)
Short-chain chlorinated paraffins (SSCP)	85535-84-8 (g)
Tetrabromobisphenol A	79-94-7
Tetrachlorobenzene, 1,2,4,5-	95-94-3
Toxaphene	8001-35-2

—Explanatory Notes Regarding Specific Chemicals on the PBT List (WAC 173.333.310)

- (a) **Perfluorooctane sulfonates (PFOS):** PFOS (Molecular formula $C_8F_{17}SO_3$) is a member of a group of organic compounds that consists of an eight carbon chain where the hydrogen atoms have been substituted with fluorine atoms and a reactive sulfonate group at one end of the chain. PFOS derivatives and salts include: Acid (CAS 1763-32-1); ammonium salt (CAS 29081-56-9); diethanolamine salt (CAS 70225-14-8); lithium salt (CAS 29457-72-5); and potassium salt (CAS 2795-39-3).
- (b) **Polycyclic aromatic hydrocarbons (PAHs):** PAHs are a group of compounds composed of two or more fused aromatic rings. Ecology has determined that the following PAH compounds meet the proposed PBT criteria in WAC 173.333.320(2): Dibenzo(a,h)anthracene (CAS 53-70-3); 3-methylcholanthrene (CAS 56-49-5); benzo(r,s,t)pentaphene (CAS 189-55-9); dibenzo(a,h)pyrene (CAS 189-64-4); benzo(g,h,i)perylene (CAS 191-24-2); dibenzo(a,e)pyrene (CAS 192-65-4); indeno(1,2,3-ed)pyrene (CAS 193-39-5); 7H-dibenzo(e,g)carbazole (CAS 194-59-2); perylene (CAS 198-55-0); benzo(j)fluoranthene (CAS 205-82-3); benzo(b)fluoranthene (CAS 205-99-2); fluoranthene (CAS 206-44-0); benzo(k)fluoranthene (CAS 207-08-9); benzo(a)phenanthrene (CAS 218-01-9); dibenzo(a,j)acridine (CAS 224-42-0); and dibenzo(a,h)acridine (CAS 226-36-8).
- (c) **Polybrominated-dibenzo-p-dioxins and dibenzofurans (PBDDs/PBDFs):** PBDDs/PBDFs consist of two groups of tricyclic aromatic compounds with similar chemical and physical properties. Ecology has determined that the following PBDD/PBDF congeners meet the proposed PBT criteria in WAC 173.333.320(2): 2,3,7,8-tetrabromodibenzo-p-dioxin (CAS 50585-41-6); and 2,3,7,8-tetrabromodibenzofuran (CAS 67733-57-7).
- (d) **Polybrominated diphenyl ethers (PBDEs):** PBDEs are a class of chemicals with the general chemical formula of $C_{12}H_{9-10}Br_{(1-10)}O$ with the sum of H and Br atoms always equal to 10. There are theoretically 209 congeners which can be divided into 10 congener groups (mono through decabromodiphenyl ethers). Ecology has determined that the following congener groups meet the proposed PBT criteria in WAC 173.333.320(2) and/or degrade to congeners that meet the draft PBT criteria in WAC 173.333.320(2): Pentabromodiphenyl ether (CAS 32534-81-9); octabromodiphenyl ether (CAS 32536-52-0); decabromodiphenyl ether (CAS 13654-09-6).
- (e) **Polychlorinated-dibenzo-p-dioxins and dibenzofurans (PCDDs/PCDFs):** PCDDs/PCDFs consist of two groups of tricyclic aromatic compounds with similar chemical and physical properties. Ecology has determined that the following PCDD/PCDF congeners meet the proposed PBT criteria in WAC 173.333.320(2): 2,3,7,8-tetrachlorodibenzo-p-dioxin (CAS 1746-01-6); 1,2,3,7,8-pentachlorodibenzo-p-dioxin (CAS 40321-76-4); 1,2,3,4,7,8-hexachlorodibenzo-p-dioxin (CAS 39227-28-6); 1,2,3,6,7,8-hexachlorodibenzo-p-dioxin (CAS 576-53-8); 1,2,3,7,8,9-hexachlorodibenzo-p-dioxin (CAS 19408-74-3); 1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin (CAS 35822-46-9); 1,2,3,4,6,7,8,9-octachlorodibenzo-p-dioxin (CAS 3268-87-9); 2,3,7,8-tetrachlorodibenzofuran (CAS 51207-31-9); 1,2,3,7,8-pentachlorodibenzofuran (CAS 57117-41-6); 2,3,4,7,8-pentachlorodibenzofuran (CAS 57117-41-4); 1,2,3,4,7,8-hexachlorodibenzofuran (CAS 70648-26-9); 1,2,3,6,7,8-hexachlorodibenzofuran (CAS 57117-44-9); 1,2,3,7,8,9-hexachlorodibenzofuran (CAS 72918-21-9); 2,3,4,7,8,9-hexachlorodibenzofuran (CAS 60851-34-5); 1,2,3,4,6,7,8-heptachlorodibenzofuran (CAS 67562-39-4); 1,2,3,4,7,8,9-heptachlorodibenzofuran (CAS 55673-89-7); 1,2,3,4,6,7,8,9-octachlorodibenzofuran (CAS 39001-02-0).
- (f) **Polychlorinated naphthalenes (PCN):** PCNs are a group of chlorinated naphthalenes that contain 1 to 8 chlorine atoms and are structurally similar to PCBs. Ecology has determined that the following compounds meet the proposed PBT criteria in WAC 173.333.320(2): Heptachloronaphthalene (CAS 32241-08-0); hexachloronaphthalene (CAS 1335-87-1); pentachloronaphthalene (CAS 1321-64-8); tetrachloronaphthalene (CAS 1335-88-2); and trichloronaphthalene (CAS 1321-65-9).
- (g) **Short-chain chlorinated paraffins (SSCP):** SSCPs are chlorinated derivatives of n-alkanes that have carbon chains ranging from 10 to 13 carbon atoms and a chlorine content ranging from 50-70% by weight.

(3) Lead and cadmium. Ecology will not develop a chemical

action plan for lead and cadmium until the environmental protection agency concludes the process for preparing a metals assessment framework and ecology completes its review of the bioavailability of these two substances.

~~(3) **Categories.** Ecology will assign each chemical on the PBT list to one of the following three categories:~~

~~—— (a) **Category 1.** Ecology will place chemicals in this category if the department determines that the chemical is used, released or present in Washington.~~

~~—— (b) **Category 2.** Ecology will place chemicals in this category if the department determines that there is insufficient information to reach a conclusion on whether the chemical is used, released or present in Washington.~~

~~—— (c) **Category 3.** Ecology will place chemicals in this category if the department determines that:~~

~~—— (i) All uses and releases of the chemical are prohibited under other state or federal laws or regulations; or~~

~~—— (ii) There are no feasible measures for reducing or phasing out uses and releases of the chemical beyond levels required under other federal and state laws and regulations; or~~

~~—— (iii) Is not present in Washington's environment.~~

(4) **Revising the PBT list.** Ecology will periodically review and, as appropriate, revise the PBT list in subsection (2) of this section using the criteria and procedures in WAC 173-333-320 through 173-333-340.

NEW SECTION

WAC 173-333-320 What criteria will ecology use to identify and add chemicals or chemical groups to the PBT list? (1)

Purpose. This section describes the criteria that ecology will use to determine whether a chemical or group of chemicals should be included on the PBT list.

(2) **Criteria for identifying PBTs.** A chemical or group of chemicals will be included on the PBT list if ecology determines it meets each of the following criteria:

(a) **Persistence.** The chemical or chemical group can persist in the environment based on credible scientific information ~~evidence~~ that:

(i) The half-life of the chemical in water is greater than or equal to sixty days; or

(ii) The half-life of the chemical in soil is greater than or equal to sixty days; or

(iii) The half-life of the chemical in sediments is greater than or equal to sixty days; and

(b) **Bioaccumulation.** The chemical or chemical group has a high potential to bioaccumulate based on credible scientific information evidence that the bioconcentration factor or bioaccumulation factor in aquatic species for the chemical is greater than 1000 or, in the absence of such data, that the log-octanol water partition coefficient ($\log K_{ow}$) is greater than five, and;

(c) **Toxicity.** The chemical or chemical group has the potential to be toxic to humans or plants and wildlife based on credible scientific information evidence—that:

(i) The chemical or a chemical group is known to cause or can reasonably be anticipated to cause cancer or teratogenic effects, reproductive effects, neurological disorders or other acute or chronic health effects; or

(ii) The chemical or chemical group is known to cause or can reasonably be anticipated to cause adverse effects in aquatic and terrestrial plants and animals.

ALTERNATE LANGUAGE

(c) Toxicity. The chemical or chemical group has the potential to be toxic to humans or plants and wildlife based on evidence that:

i. The chemical or chemical group is a carcinogen;

ii. The chemical or chemical group is developmental or reproductive toxicant;

iii. The chemical or chemical group is a neurotoxicant;

iv. The chemical or chemical group has a reference dose or equivalent toxicity measure that is less than 0.003 mg/kg/day;

v. The chemical or chemical group has a chronic no-observed effect concentration (NOEC) or equivalent toxicity measure that is less than 0.1 mg/L; or

vi. The chemical or chemical group has an acute no-observed effect concentration (NOEC) or equivalent toxicity measure that is less than 1.0 mg/L.

(d) **Additional criteria applicable to metals.** The chemical or chemical group is a metal and ecology determines that it is

likely to be present in forms that are bioavailable.

(3) **Degradation products.** Ecology will consider both the chemical and its degradation products when making decisions on whether a chemical meets the criteria in subsection (2) of this section. If a chemical does not meet the criteria in this section for a PBT but degrades into chemicals that do meet the criteria in this section for a PBT, the parent chemical will be considered in the development of a CAP for those derivative chemicals.

NEW SECTION

WAC 173-333-330 What criteria will ecology use to remove a PBT from the PBT list? (1) **Purpose.** This section describes the criteria and factors ecology will use to determine whether a chemical or group of chemicals should be removed from the PBT list.

(2) **Criteria for removing a chemical from the PBT list.** Ecology will remove a chemical or chemical group from the PBT list if the department determines that credible scientific information developed subsequent to the listing decision provides evidence that the chemical or chemical group does not meet the PBT criteria in WAC 173-333-320(2).

NEW SECTION

WAC 173-333-340 What process would ecology follow to revise the PBT list? (1) **Purpose.** This section describes the processes ecology will use to notify the public and amend the PBT list after making a determination that chemicals or groups of chemicals should be added or removed from the PBT list.

(2) **Reviewing and updating the PBT list.** Ecology will periodically review and update WAC 173-333-310. The frequency of review will be determined by credible scientific information available on individual chemicals or chemical groups, rule-making petitions submitted to ecology, and available agency resources. Ecology will comply with the requirements for reviewing and responding to rule-making petitions in the Administrative Procedure Act, chapter 34.05 RCW.

(3) **Public notification.** If ecology makes a preliminary

determination that a chemical should be added or removed from the PBT list, the department will prepare a technical discussion paper that summarizes the scientific information supporting the addition or removal of a chemical and it will notify the public through an announcement posted on the ecology web site and published in the *Washington State Register*.

(4) **Amending the PBT list.** If ecology makes a final determination that a chemical or chemical group should be added or removed from the PBT list, the department will initiate actions to amend WAC 173-333-310 through formal rulemaking.

PART IV CHEMICAL ACTION PLANS (CAPs)

NEW SECTION

WAC 173-333-400 What is a chemical action plan (CAP)? A chemical action plan (CAP) is a plan that identifies, characterizes and evaluates uses and releases of a specific PBT or a group of PBTs and recommends actions to protect human health or the environment.

~~(1) A chemical action plan (CAP) is a plan that identifies, characterizes and evaluates uses and releases of a specific PBT or a group of PBTs and includes recommendations on actions to protect human health or the environment.~~

~~—— (2) CAPs will include recommendations for:~~

~~—— (a) Reducing and eliminating uses and releases of the specific PBT or group of PBTs addressed in the CAP;~~

~~—— (b) Managing products or waste that contain the specific PBT or group of PBTs addressed in the CAP;~~

~~—— (c) Minimizing exposure to the specific PBT or group of PBTs;~~

~~—— (d) Collecting additional information needed to evaluate the feasibility of potential actions; and~~

~~—— (e) Measuring or monitoring the effectiveness of actions being implemented in Washington.~~

Draft PBT Rule (Chapter 173.333 WAC)

Strikethrough version showing original June 1, 2005 language and proposed language [highlighted in yellow] as of September 2, 2005

NEW SECTION

WAC 173-333-410 What evaluation factors and processes will ecology use to select PBTs for chemical action plan preparation?

(1) **Purpose.** The purpose of this section is to describe the evaluation factors and processes ecology will use to decide when to develop a chemical action plan for a particular chemical or group of chemicals included on the PBT list.

(2) **Decision-making process.** Ecology will consult with the department of health to develop a multi-year schedule for the preparation of chemical action plans. The schedule shall outline the chemicals for which chemical action plans will be prepared, the timeline for completing the plans and the rationale for selecting each chemical. The process for deciding when to prepare a chemical action plan for a particular chemical or group of chemicals includes the following:

~~(2) **Candidates for CAP development.** Ecology will consider developing chemical action plans for chemicals on the PBT list that meet the following criteria:~~

~~— (a) Ecology determines that the chemical or chemical group has a half-life in water that is greater than or equal to sixty days, soil or sediment that is greater than or equal to one hundred eighty days;~~

~~— (b) Ecology determines that the chemical or chemical group has a bioconcentration factor or bioaccumulation factor in aquatic species that is greater than 2,000; and~~

~~— (c) Ecology determines that the chemical or chemical group is "toxic" as defined in WAC 173-333-302 (2)(c).~~

~~(3) **Decision-making process.** Ecology will consult with the department of health to select the chemicals for chemical action plan preparation. The process for deciding when to prepare a chemical action plan for a particular chemical or group of chemicals includes the following:~~

(a) **Selection factors.** Ecology will consider the following factors when deciding whether to prepare a chemical action plan

for a particular chemical or group of chemicals identified in WAC 173-333-310(2):

(i) Relative ranking. The relative ranking assigned to each PBT based on ecology's evaluation of information on PBT characteristics, uses of the chemical in Washington, releases of the chemical in Washington, ~~and the levels of the chemical present in the Washington environment, and levels of the chemical present in Washington residents.~~ Ecology will not prepare a chemical action plan for a PBT if the department determines that the chemical is not used, released or present in Washington state.

(ii) Opportunities for reductions. Whether there are opportunities for reducing or phasing out uses, production or releases of the PBT in Washington. In reviewing available information, the agencies shall consider whether more than one PBT is present in particular products, generated in particular processes or released from particular sources (co-occurring chemicals).

(iii) Multiple chemical releases and exposures. Scientific evidence on the combined effects of exposure to one or more PBTs and other substances commonly present in the Washington environment.

(iv) Sensitive population groups and high-exposure populations. Scientific evidence on the susceptibility of various population groups including the timing of the exposure and the cumulative effects of multiple exposures.

(v) Existing plans or regulatory requirements. Whether there are existing plans or regulatory requirements that reduce and phase out uses and releases of a particular PBT or group of PBTs. Ecology will not prepare a chemical action plan for a PBT if the department determines that all uses and releases of the chemical are prohibited under other state or federal laws and regulations.

(vi) Available information. Whether information is available on uses, releases and concentrations in the Washington environment or Washington residents. Ecology will prioritize PBTs for information collection if the department determines there is insufficient information to reach a conclusion on whether the PBT is used, released or present in Washington.

~~(b) Preliminary selection. Ecology will prepare a written summary of the preliminary decision to prepare a chemical action plan for one or more PBTs and the rationale for selecting that particular PBT or group of PBTs.~~

~~(3)(e)~~ **Public notice and comment.** Ecology will notify the public when it has prepared a ~~makes a~~ preliminary schedule selection and provide an opportunity for public review and comment. Ecology will notify the public through an announcement

published in the *Washington State Register* and posted on the ecology web site. Ecology will also send a written announcement to interested persons and organizations. Ecology will provide sixty days, from the date the notice is published in the *Washington State Register* for the public to review and submit comments on the preliminary selection.

(4)(d) Final decision. Ecology will review all public comments on the preliminary schedule selection prior to making a final decisions on which PBTs to include on the schedule and the timelines for completing plans for those PBTs. ~~to prepare a chemical action plan for a particular PBT or groups of PBTs.~~ Ecology will notify the public of the final decision through an announcement published in the *Washington State Register* and posted on the ecology web site. Ecology will also provide written notification to individuals or organizations who submitted comments on the preliminary schedule selection.

(5) Schedule updates. Ecology will review and, as appropriate, update the schedule for chemical action plans at least once every three years. In making such revisions, Ecology will follow the process for preparing the schedule (including an opportunity for public review and comment) specified in this section.

NEW SECTION

WAC 173-333-420 What are the contents of a CAP? (1)
Contents of the chemical action plans. Chemical action plans will include, as appropriate, the following types of information, evaluations and recommendations:

(a) **General chemical information.** General information includes, but is not limited to, chemical name, properties, uses and manufacturers.

(b) **Production, uses and releases.** An analysis of information on the production, unintentional production, uses and disposal of the chemical. This will include estimates on the amount of each PBT used and released from all sources or activities in Washington and other man-made and naturally occurring sources that may contribute to exposures in Washington. Sources may include other chemicals or products that are known or suspected to degrade to the chemical included on the PBT list.

(c) **Human health and environmental impacts.** Information on ~~An evaluation of~~ the potential impacts on human health and the environment associated with the use and release of the PBT

chemical. This will include consideration of available information on the levels of the PBT present in Washington's environment, the likely fate and transport mechanisms, available body-burden data, toxicity effects, and the rates of diseases that have been associated with exposure to the particular PBT.

(d) **Current management approaches.** An evaluation of the regulatory and nonregulatory approaches that influence production, uses, releases and management of each PBT.

(e) **Identification of policy options.** A list of options for managing, reducing and eliminating the different uses and releases of the PBTs addressed in the CAP. The range of options for particular uses and releases will include:

- (i) A no-action option;
- (ii) An option that results in the elimination of PBT uses and releases;
- (iii) An option to manage chemicals to reduce exposure; and
- (iv) Other options, including the use of available substitutes, which will enable full consideration of the opportunities and constraints for reducing particular uses, releases and exposures.

f) **Recommendations.** (i) Recommendations for:

(A) Reducing and phasing-out uses and releases of the specific PBT or group of PBTs addressed in the CAP;

(B) Managing products or wastes that contain the specific PBT or group of PBTs addressed in the CAP;

(C) Minimizing exposure to the specific PBT or group of PBTs.

(i) Recommendations on actions to manage, reduce or phase-out uses and releases of the PBT addressed in the CAP.

(ii) The recommendations will be based on an evaluation of the following factors:

(A) Environmental and human health benefits associated with implementing the action;

(B) Economic and social impacts associated with implementing the action;

(C) Feasibility of implementing the action;

(D) Availability of safer substitutes for uses of the PBT being addressed in the plan; and

(E) Consistency with existing federal and state regulatory

requirements;

 (g) **Implementation Steps.** A description of the steps ecology will take to implement the CAP, including a description of:

 (A) The existing resources and necessary additional budget ecology intends to use;

 (B) Potential funding sources for CAP implementation, including those that tie implementation costs to PBT sources and products;

 (C) How ecology intends to inform and educate affected persons about the CAP;

 (D) How ecology will promote and assist voluntary actions;

 (E) How ecology will collect additional information needed to evaluate the feasibility of potential actions; and

 (F) Any recommended regulatory actions and how ecology will pursue them.

 (h) **Performance measures.** A description of interim milestones to assess progress and the use of objectively measurable outcomes, including recommendations for environmental and human health monitoring to measure levels of the chemical(s) (in the CAP) over time.

 (i) Other. Other information that ecology determines is necessary to support the decision-making process.

 (2) **Regulatory consistency.** When evaluating the consistency with existing federal and state regulatory requirements under subsection (1)(f)(i)(D) of this section, ecology will:

 (a) Ensure that the recommendations do not violate existing federal or state laws;

 (b) Determine if the recommendations would impose more stringent performance requirements on private entities than on public entities, unless already required to do so by federal or state law, and if so, describe the justification for doing so; and

 (c) Determine if the recommendations differ from federal regulations and statutes, and if so, explain why the difference is necessary and how ecology will coordinate with other federal, state, and local laws applicable to the same activity or subject matter.

~~(f) **Recommendations.** The recommendations will include:~~

~~—— (i) Recommendations on actions to manage, reduce or phase out uses and releases of the PBT addressed in the CAP. The recommendations will be based on an evaluation of the following factors:~~

~~—— (A) Feasibility of implementing the action;~~

~~—— (B) Environmental and human health benefits associated with implementing the action;~~

~~—— (C) Economic and social impacts associated with implementing the action; and~~

~~—— (D) Consistency with existing federal and state regulatory requirements.~~

~~—— (ii) A description of the steps ecology will take to implement the CAP, including a description of:~~

~~—— (A) The existing resources and necessary additional budget ecology intends to use;~~

~~—— (B) Potential funding sources for CAP implementation, including those that tie implementation costs to PBT sources and products;~~

~~—— (C) How ecology intends to inform and educate affected persons about the CAP; and~~

~~—— (D) How ecology will promote and assist voluntary actions.~~

~~—— (iii) Performance measures. A description of interim milestones to assess progress and the use of objectively measurable outcomes, including recommendations for environmental and human health monitoring to measure levels of the chemical(s) (in the CAP) over time.~~

~~—— (g) Other. Other information that ecology determines is necessary to support the decision-making process.~~

~~—— (2) **Regulatory consistency.** When evaluating the consistency with existing federal and state regulatory requirements under subsection (1)(f)(i)(D) of this section, ecology will:~~

~~—— (a) Ensure that the recommendations do not violate existing federal or state laws;~~

~~—— (b) Determine if the recommendations would impose more stringent performance requirements on private entities than on public entities, unless already required to do so by federal or state law, and if so, describe the justification for doing so; and~~

~~—— (c) Determine if the recommendations differ from federal regulations and statutes, and if so, explain why the difference is necessary and how ecology will coordinate with other federal, state, and local laws applicable to the same activity or subject matter.~~

~~(3) **Economic analyses.** In assessing economic impacts under subsection (1)(f)(i)(C) of this section, ecology will identify costs of implementing the recommendations. This may include a~~

qualitative and/or quantitative analysis of the probable benefits and costs of the CAP.

(4) **Safer Substitutes:** When evaluating the availability of safer substitutes for PBT uses, Ecology will:

(a) Determine if the recommendations include the use of safer substitutes, and if not, explain why Ecology has not recommended this option.

(b) Determine if the recommendations call for additional research for uses with no safer substitutes, and if not, explain why Ecology has not recommended this option.

(c) Provide for periodic re-evaluation of whether substitutes are available.

NEW SECTION

WAC 173-333-430 What process will ecology use to develop CAPs? (1) **Purpose.** The purpose of this section is to identify the process ecology will use to develop CAPs.

(2) **Workplan/scoping.** Once a chemical is selected for CAP development, ecology will initially plan and scope the CAP of the selected chemical based upon available information regarding the chemical's products, uses and releases; human health exposure and ecological hazards; environmental releases, fate, and transport; environmental concentrations and available substitutes; available options for managing uses and releases; estimated costs, benefits and effectiveness of alternate management options; and any other information ecology determines is necessary to support the CAP development process. Ecology will consult with the department of health regarding all portions of the CAP related to human health exposures.

(3) **Advisory committee.** Ecology will create an external advisory committee for each CAP that ecology develops. The purpose of the advisory committee is to provide stakeholder input and expertise.

(a) The advisory committee membership will include, but not be limited to, representatives from: Large and small business sectors, community, environmental and public health advocacy

Draft PBT Rule (Chapter 173.333 WAC)

21

Strikethrough version showing original June 1, 2005 language and proposed language as of September 2, 2005

groups, local governments, and public health agencies. When appropriate, representatives from the following groups will also be invited to participate: Agricultural groups, worker safety advocacy groups, and other interested parties. Federally recognized tribal governments will also be encouraged to participate. In addition, representation from other state executive agencies may be requested to provide input and to represent agency interests in the CAP development process. Outside experts (if needed) may be requested to provide technical expertise.

(b) A neutral third-party facilitator may be hired to facilitate advisory committee meetings.

(c) The advisory committee will follow a consultative process, where ecology will draft the CAP in consideration of input from advisory committee members.

(d) All advisory committee meetings will be open to the public. Ecology will notify the public of advisory committee meetings through an announcement posted on the ecology web site and written notification to interested individuals and organizations.

(4) **Information collection phase.** Ecology will collect all necessary and up-to-date information regarding the selected chemical. CAP advisory committee members will be asked to contribute, and as appropriate, review information from ecology during this phase of CAP development. The department of health will be asked to review any information related to human health.

(5) **Draft recommendations.** Ecology will develop a draft CAP for advisory committee review and comment. Ecology will review all advisory committee comments and, as appropriate, revise the draft CAP prior to distributing it for public review and comment.

(6) **Public review and comment.** Ecology will notify the public when it has developed a draft CAP and provide an opportunity for public review and comment. The public comment period for each draft CAP will be a minimum of sixty days. Ecology will notify the public through an announcement posted concurrently on the ecology web site, a notice in the *Washington State Register*, and sent to interested persons and organizations. The comment period shall start from the date the notice is published in the *Washington State Register*. During the comment period, ecology will hold a minimum of two public meetings on the draft CAP. One meeting shall be held on the western side of the state, and one meeting shall be held on the eastern side of the state. Ecology may hold additional public meetings during the public comment period if determined necessary. Ecology will provide a response to all public comments.

(7) **Final recommendations.** Ecology will review and provide responses to all public comments on the draft CAP prior to issuing the final recommendations. Ecology will notify the public of the final recommendations through an announcement that will be published in the *Washington State Register* and posted on the ecology web site. Ecology will also provide written notification to individuals or organizations who submitted comments on the draft CAP.

(8) **Coordination with other agencies.** Ecology will coordinate with other government agencies and interested parties as appropriate on the implementation of the final CAP. Ecology will consult with the department of health on public information materials addressing food safety issues.